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American Railroad Journal.

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Saturday, May 24, 1851.

The Opening of the Erie Railroad.

The directors of this great work of internal communication, having brought their labors so far to a close, as to be able to open their road throughout its entire length, determined to celebrate the event, in a manner suitable to the magnitude of the undertaking; its vast importance to this city, the line of country it traverses, and the Western States.—Wednesday the 14th of May, instant, and the three succeeding days, were appointed for this purpose. Accordingly, at six o'clock on the morning of the first-mentioned day, the President and Directors of the Company, together with their invited guests, to the number of between three and four hundred, together with the Superintendent, Secretary, Engineer in Chief, and several other officers of the company, embarked on board the splendid steamer Erie, at the foot of Duane street, and proceeded up the river to Piermont, the eastern terminus of the road

on the Hudson. The noble vessel had been gaily decorated with numerous flags and evergreens tastefully arranged in festoons, and must have afforded a beautiful sight to those who viewed her from the shore, and to the thousands assembled on the dock at Piermont.

Amongst the guests were many of the most eminent men of the nation. President Fillmore, and four members of his cabinet, namely, the Hon. Daniel Webster, Secretary of State; the Hon. Mr. Graham, Secretary of the Navy; Hon. Mr. Crittenden, Attorney General, and the Hon. Mr. Hall, Post-Master General, were received on board a few minutes before our departure from the company's dock, at the foot of Duane street, amidst the plaudits of the passengers, and multitude assembled to witness our departure, the roar of cannon, and the heart-stirring music of the band. Ere the firing had ceased, we were under full way for Piermont. The morning, which had opened gloomy and lowering, now gave signs of improvement, and the spirits of all were cheered with the prospect of a fine day. The air felt soft and invigorating, as it wafted past us the fragrance of the orchards and forest trees in full bloom along the shores of the river. Upon returning to the deck of the steamer, after partaking of the breakfast provided for the occasion, we found ourselves abreast the grandest part of that bold ledge of rocks extending many miles along the west bank of the Hudson, known as the Palisades, whilst the right bank presented a scene of equal beauty, in the numerous and elegant country seats, ensconced amongst the tender foliage of early spring. But ere we had time to fully contemplate this glorious scenery, we were entering the "Tappan Zee," and rounding too at Piermont.

Here a large assemblage of the inhabitants of Rockland County were met, to welcome our arrival, which they did in a right hearty manner. The scene presented at this, the eastern terminus of the road, gave indication of what awaited us throughout the whole line. The immense station house, at the end of the pier, which extends one mile into the river or Tappan Zee, the company's steamers, and freight boats, (a number of which were here moored) and a long line of locomotives, drawn up in single file, and filling nearly half the length of the pier, were all tastefully decorated with evergreens and flags. Amidst these were to be seen hundreds, if not thousands, of the fair of Rockland

County, whose smiling faces, and waving handkerchiefs, gave evidence of the pleasure they experienced. Presently the cheering ceased, and the excursionists took their places in the trains of cars, two of which were in readiness to transport us to Dunkirk on Lake Erie. The cars, as well as the locomotives that were to draw them, appeared to be entirely new, and their equipments perfect. The former, like all the passenger cars on this road, are constructed in a style of luxurious comfort and ease, unequalled on any other railway in the United States, if not in the world. The road being of the wide, or six foot gauge, admits of the cars being made of a width calculated to insure the greatest amount of comfort to the traveller.

Piermont having been selected by the company as the eastern terminus of the road, some special notice of the place may be expected by the readers of the *Railroad Journal*. Of the village itself, but little can be said: its growth has doubtless disappointed the expectations of its founders, as it contains scarce a thousand inhabitants. It is a place of no commercial importance, though its pleasant and picturesque situation in the break in the rocky wall of the Palisades, may render it a favorite resort and residence for such business men as relish a country residence at a "convenient distance from the city." The terms of the charter, granted by the New York Legislature, required the company to have the terminus of their road, east and west, within the limit of that state. This point being the nearest to the Great Metropolis, practicable for the penetration of the high rocky barrier forming the west bank of the Hudson, within the state, was accordingly selected. Experience has now fully proved the narrowness of the policy of the Legislature, which arbitrarily imposed upon the company such a necessity, when a cheaper and speedier route lay through the sister state of New Jersey, to Jersey City. It is doubtful, indeed, if the three millions subscribed by the state for the construction of the road, and subsequently presented to the company, will compensate for the vast expenditure entailed upon them in constructing this immense pier, and overcoming the great obstacles interposed by nature at this great point. The entire passenger business is now done over the route from Jersey City to Sufferns, at a large cost to the company. This blunder, however, in the location of the eastern terminus, is no fault of theirs, and we will proceed

on our journey to Lake Erie, if the reader will be so kind as to accompany us so great a distance.

But just at the moment when all are listening for the signal of departure, there is a loud call for President Fillmore and Webster, by the assemblage on the pier, who doubtless would not have wished us God speed, if these distinguished guests of the company had not responded to this call. They accordingly presented themselves on what may appropriately be termed "the Erie railway platform," being a car with a platform, attached to the hinder end of the train, and next to the one containing the Directors and the Presidential party, expressly for this purpose, and made a brief acknowledgment of the compliment.

At five minutes past eight, A. M., the steamer whistle announced that we were about to commence our long journey of 450 miles, to the shores of lake Erie, and anon we were in motion. As we passed up the pier, the band which was to cheer us with its enlivening music amongst the hills and valleys, struck up a heart-stirring air, and we were again greeted by the shouts of the multitude, the firing of cannon, and the almost deafening shrieks of at least 20 locomotives in full blast. But we have omitted to mention that during our brief stoppage on the pier, the people of Rockland County presented the Company with a flag, beautifully wrought, by the ladies, with a motto significant of the boon conferred on the county by this great work of internal improvement. We may also mention that similar presentations took place at every station (over sixty in number) on the line of road; some of these we may hereafter mention more particularly.

Shortly after commencing the first ascending grade, a slight incident occurred, somewhat emblematic of the first commencement of the work. The locomotive, though new, powerful, and perfect, suddenly came to a stop, where no stop was intended, and obstinately refused to budge an inch. Everybody began to inquire what is the matter? Why are we stopping here? The questions were presently answered. The resinous quality of the wood had stopped up the flues, and lessened their draught. In a few minutes the second train came along and pushed us up the slope in the most neighborly manner. We are now fairly set out upon the excursion, and on we go assisted in this way for several miles, clearing the hills at the rate of sixty feet in the mile, following the course of a small stream called the Sparkill. This part of Rockland County is rough and very unpromising as an agricultural district. Some portions of it, however, are turned to good account for grazing, and raising of cattle. Here, we are informed by the admirable Guide to the New York and Erie railroad, published by the Harpers', is produced in considerable abundance, milk, and other articles of the dairy. Whilst referring to the above-mentioned Guide, we would strongly recommend every person going over this road to procure one before starting. Its sketches of scenery and descriptions are admirably got up and true to nature. In addition to the above products, this county is famous for its strawberries, and we learn from the Guide that eighty thousand baskets of this delicious fruit were brought down in a single train last year. From the immense business done in milk, for more than fifty miles, this part of the road has been quaintly termed the "Milky Way."

At ten miles from Piermont the country becomes more picturesque, and we are passing over classic ground. It was in this neighborhood that Washington carried on some important military opera-

tions in the revolution. On our right, as we passed a statue of the hero, cut out of a single stone, by the self-instructed artist, Mr. Thom, we gave three hearty cheers for the "father of his country."

The time limited for the journey did not admit of the trains stopping at all the stations. It had therefore been arranged to hold up at about every fourth one, being one or two of the most important in each county. At the others, the engineer slightly checked the speed, to enable the officer, appointed for the purpose, to receive the flags. At each one, however, were assembled large numbers of people, men, women and children, who greeted the flying train as it swept by with waving handkerchiefs, huzzas, and often with the firing of cannon. At sixteen miles from the pier, we passed Sufferns, the point where the Patterson, Ramapo, and Union Railways (forming the line now used, by an arrangement with the Erie company for transporting the passengers of the latter road) intersects our line. The country here improves in appearance, and the scenery in interest. The numerous orchards in full bloom, and the many fine farms sweetly slumbering in the quiet valleys, or stretching boldly up the hill sides and often crowning their tops, are pleasing objects of contemplation, whilst even and anon the eye catches glimpses of higher hills and more imposing scenery in the distance, both on the right hand and the left this description of scenery continues to improve in effect as we enter Orange County, some fifteen miles beyond Sufferns. But we have too little time to dwell upon the beauties of the scenery on this part of the route, for we are just arriving at Middletown, our second stopping place since leaving Piermont, seventy-seven miles from New York. Here we found a goodly array of the youth, beauty and manhood of Orange County, drawn up in front of the station house to welcome our arrival. On the usual call for "Fillmore and Webster," these gentlemen presented themselves on the travelling platform, and the former made a short and appropriate acknowledgment, which was interrupted by the neighing of the iron horse, and the starting of the train. Middletown is a thriving place, quite noted for its iron works and foundry.

As it is our wish, in jotting down some of the incidents of the excursion, at the same time to note interesting scenery and the more striking features of the route, as well as to remark on important points, in this great main track of railway, we would here refer to one of the latter, passed before reaching Middletown. Near Turners, at a distance of sixty-four miles, via Piermont, from New York, and fifty-four via the Patterson route, there is a branch railway to Newburgh nineteen miles distant on the Hudson. This branch is owned by the company, and was opened in January, 1850. The object of its construction was to bring the more northern and river counties, into direct communication with the "southern tier," and with the west. These objects, it is said, have been fully realized.—The completion of this important branch, on the same scale as the main trunk, more than a year before the latter was opened, affords evidence of the determined character of the men who have at length achieved a work of such gigantic magnitude, and which has cost over twenty millions of dollars.

After leaving Middletown we gradually enter a wilder and more mountainous country. We are now ascending the easterly slope of the Shawangunk Mountain at a tolerably moderate grade, near the western confines of Orange County. Many fair farms still present themselves to the view, which

relieve this part of the route from the wild desolate aspect it has in winter, when the absence of green fields and luxuriant foliage, exhibit this broken section of country in all its naked ugliness. On nearing the summit, and descending the western acclivity of the mountain, which is quite precipitous, towards the Delaware, the scenery becomes grander and more varied. As we traverse this rocky barrier lying along the easterly side of the Delaware, and its tributary the Neversink, the views that open themselves to the sight in rapid succession, to the delighted traveller, are truly magnificent. As we emerge from one of the heaviest rock cuttings on the whole line, the beautiful valley of the Neversink, lying several hundred feet below us, stretches far away to the north-east, where lovely farms and orchards lay spread out before us, as on a map. As the road curves round a point of the mountain to the south, the pretty village of Port Jervis, near the banks of the Delaware, becomes visible, and a little further on, the village itself. The western descent of this mountain pass is two hundred feet more than the eastern slope, and it was at one time in contemplation to make a tunnel under the mountain, two or three miles in length. But this difficulty was subsequently overcome by changing the route a few miles to its present locality.

The appearance of the Delaware region looking down the river a dozen of miles from this point, is quite different and much more inviting than that of the long reach that lies before us. The hills which wall it in like an immense chasm, for nearly a hundred miles up the stream, seem, when viewed here, to recede from each other, leaving a considerable quantity of bottom land, or flats, which present many indications that the busy hand of labor has been at work upon them. When we have finished the descent of the mountain, the road turns again to the west, and crosses the Neversink, which here empties into the Delaware, and in a few minutes we reach the Delaware station, half a mile south of Port Jervis, which latter is situated on the Delaware and Hudson Canal. The usual formula of presenting a flag to grace our train took place, and the usual call for Fillmore and Webster was heard, which, as usual, was briefly responded to, and we took our departure under a salute of cannon, and the horrible din of thirteen or fourteen locomotives finely decorated, and drawn up in array on a side track. This was regularly running the gauntlet. Near Port Jervis the three states of New York, Pennsylvania, and New Jersey meet. Port Jervis has a considerable trade in coal and lumber, carried on, on the canal. We have some doubts whether the village itself will benefit much by the railway, though the surrounding country doubtless will.

We have now passed over what is termed the "Eastern Division" of the Erie railroad, and have endeavored to give some general view of the features which it presents. To those who cannot make a trip over this interesting portion of the road, we recommend a perusal of the Guide book, before referred to, which will afford an excellent idea of the varied scenery it presents. We now cross the Delaware into the State of Penn, which charges the Company \$10,000 a year for the privilege of conferring on its people the blessings of a railway. The character of the scenery now changes, and with little variation, presents a most monotonous wall, rising in very many parts abruptly from the river, several hundred feet in height, receding at the top, and extending most of the way to Deposit, a distance of ninety miles. Here the road leaves

this rough, and but for the river itself, gloomy region, to pay a visit to the more beautiful and sunny valley of the Susquehanna. Though there are a few points in this great distance along the Delaware section, or division, which are exceptions to the above general description, they do not merit particular note. The principal business carried on in this desolate region is in lumber, which is floated down the river, at high water, to Philadelphia.

The railway hugs the back of the Delaware, where sometimes, the entire width of the track has been cut out of an almost perpendicular bank, with a pertinacity truly surprising. It continues on the Pennsylvania side, to within four miles of Narrowsburgh, which is thirty-four from Delaware, and then crosses into New York. On the opposite shore of the river runs the canal, until it reaches the Lackawaxen, twenty-five miles from Delaware. Here the canal crosses the river in a wooden aqueduct, and extends up the valley of the Lackawaxen to Honnisdale, in Pennsylvania, where it meets a railway connecting it with the coal miles at Carbondale.

The canal, like the railway, seems to have been equally cramped for room; but instead of encroaching on the base of the lofty range of hills which beat over it, in the manner noted by its neighbor, it has stolen a march upon the river.—Here the traveller as he is continually rushing past the sluggish moving tow boats, has a good opportunity of contrasting the comparative merits of the two great classes of internal improvements, railways and canals. Any man who has ever given the subject the least consideration must see that the days for building canals are past. Time is everything in business, and although railways are as yet but in their infancy, they have demonstrated their superior advantages for the transport of every kind of merchandise. The lumber merchant on Lake Erie would rather pay two dollars a thousand more to have his lumber brought in three days from Dunkirk to New York, than wait three weeks to transport it by the Erie canal. By the former route he could turn over his money three times where he can twice by the latter. We venture to predict, that by the year 1875 there will be at least four double track railways from New York to the western lakes, and that the propriety of closing up the Erie canal will be seriously discussed by that time.

But as we have much to see and report before reaching Lake Erie, we must be jogging on our way. At Narrowsburgh we stop twenty minutes to dine, and after the usual ceremonies are performed, take our departure at 2 P. M., more than an hour behind time, all the better for an excellent dinner. Our next stopping place is Deposit, and the engineer lets on the steam "with a rush," and we sweep round the long and graceful curves of the Delaware, the most redeeming features in this part of the route, at the rate of thirty miles an hour. Sometimes we are running north, sometimes south along this serpentine river. At times we seem to be making a retrograde movement, for we have got the sun at 2 P. M. on our right, but our general course is westward ho! We pass number of stations without halting, merely easing off steam, to receive the flags which are always forthcoming. Several of these stations rejoice in such names as Nobody's Point, Cochection, Calicoon, Fremont, Equiment, Hale's Eddy, etc. There is no improvement in the scenery. The same rocky barrier rises on both sides of the river, here and there broken by small tributary streams, which are said to

abound in fine brook trout, especially near Deposit. Such a country, of course, presents but few indications of civilization, being a region of hemlock, there is, however, some business done in the tanning line. But we are now nearing our last calling place on the Delaware. Deposit has some good points. The situation is picturesque, and it is reported to be a very healthy locality. It is now past 3 o'clock, and we are expected to be at Elmira at 6 nearly 100 miles distant, and have several "calls to make on the road." The speeches are cut short, as they usually are, by the snorting of the iron horse, and we are off for the more sunny region of the Susquehanna, 15 miles distant. We now pass out of Delaware into Broome county, but ere reaching the beautiful Susquehanna, we have to climb a mountain barrier 1366 feet above tide water, and 368 above the Delaware, at the point where we left it, and there is but eight miles to do it in, so up we go at the rate of 58 feet to the mile. The scenery is wild and romantic in the extreme. As we approach the summit and begin to descend, the difficulties of the route increase, and we are almost struck with awe at what human genius has here accomplished. But capital, directed by genius and skill, can do almost anything.

A tremendous scream from the locomotive announces that we have reached the summit. The unearthly sound reverberates again and again from hill to hill and from hill to valley. We are now running through a tremendous chasm in the mountain top, and in a few minutes the train is stationary on the Cascade bridge, a vast wooden structure of a single arch, 275 feet long, and 184 above the bottom of this enormous ravine. The span of this arch is said to be the greatest of any in the world. Five minutes are allowed to contemplate this wonderful achievement of engineering skill, the train, locomotive and all, resting securely over the awful abyss below. The cost of this bridge was \$70,000, and the time required for its completion a year and a half.

One and a half miles further on, we make another momentary halt on the Starrucca Viaduct, the greatest wonder of the whole road. It is constructed of stone masonry, 1200 feet long, 110 feet high, and is supported on 18 arches with spans of 50 feet each. Its body is 24 feet wide, and on top 30 feet, so as to admit of a double track. But the best point to view this immense and costly structure is from the opposite side of the curve which the road takes as you descend to the valley of the Susquehanna, about a mile distant. This work alone cost the company \$320,000—a rather costly 1200 feet. These artificial objects of interest, and the sublime nature of the scenery on our immediate track have almost made us forget that the noble river we are approaching has already shown its silvery waters and pretty banks to the traveller, wearied with the savage wilds he has passed. There it lies with its beautiful meadows and graceful meanderings on our right. The rich foliage and blossoms, of which we have seen but few signs in the higher and more mountainous part of the journey, afford evidence that we are entering a more genial clime. Our limits will not allow us to do justice to the many beauties which this new region exhibits to view. We have had enough of the "sublime and beautiful" both in art and nature, to be content to part with a portion of these characteristics for the equally pleasing, but more quiet features which are to greet the vision for the next hundred miles

along the lovely vales of the Susquehanna and its tributary, the Chemung. As we proceed after a brief stoppage at the village called after the first named river, the scenery becomes every moment less wild, and the farms and villages more attractive.

It is from the country we are now traversing that the Erie railroad derives by far the largest portion of its way business. Not long since, we had the pleasure of spending a few days at the prettily situated village of Great Bend, 8 miles from Susquehanna, and were favorably impressed with the capacities of the surrounding country, by the number of people, who daily arrived and departed by the trains, and the large amount of freighting done here. Before the opening of the railway the only outlets for these extensive and fertile regions were by the stage road to Newburgh, on the Hudson, distant 120 miles, and by the Cayuga and Seneca Lakes, the latter of which is connected by the Chemung canal with the Susquehanna region.—The benefits which the railroad has conferred upon the people of this fine agricultural district, cannot readily be estimated. It has already doubled their farms in value, by the greatly increased facilities of trade; and these benefits are only just beginning to be felt. The stimulus given will in a few years increase the production and business of every kind ten fold. Thus will the people be enabled to give back to the proprietors of this great enterprise in the shape of increased business, a portion of the advantages they have received. Nor are these mutual benefits to stop with the country in the immediate vicinity of the present road. Numerous branches are projected at the most eligible points to extend them far into the country. At Great Bend the Erie road is to be intersected by the Leggett's Gap railroad, running up to the great coal region at Carbondale, 45 miles distant in Pennsylvania. This road is nearly all graded, and will be opened in the autumn of this year. At Elmira there is a branch connecting with Seneca Lake, which has been in operation for 18 months, and has rendered this a favorite route, between this city and Western New York and Canada. This branch is in the course of extension to Canandaigua, from whence it is proposed to construct a new road to Rochester, to connect with the Rochester, Lockport and Niagara Falls road now building. From the latter point the Great Western railway company of Canada are making a road to Windsor, opposite Detroit, touching at Hamilton, at the head of Lake Ontario. When these roads are all completed, some three years hence, this will be the speediest possible route from New York to Michigan. The whole distance, about 650 miles, can then easily be performed in 32 hours, being only 20 miles an hour.

Other branches are in contemplation from these rich valleys, both to the north and south, so that in a few years the Erie railway will be one of the greatest main trunk lines in the United States.—Long before the company can build a double track, it will be unequal to the exigencies of the way business alone. At Hornellsville, 332 miles from New York, via Jersey City, a branch is being built to Buffalo, so that that great emporium of trade will yield to our road a share of its business. That city, and the entire community, west and east, have already felt the benefits of the opening of the Erie railway, in the reduction of fares on the Central New York lines. Since the opening of the Erie road, as far as Elmira, and the new route by the Seneca Lake, the directors of these

roads have been compelled to bring down their fares from Buffalo to Albany from about \$10 to \$6. Nor have the stockholders suffered a loss by the reduction. The great increase in the passenger traffic, caused by cheap fares, has more than made up the deficiency, and proved how short-sighted had been the former policy.

We have now devoted so much time in endeavoring to make the reader comprehend its vast importance to the people, for whose more immediate benefit this road was undertaken, and in describing the highly interesting scenery of the eastern part of the line, we must pass over the rest of the route, which is much tamer in scenery, with fewer observations. We shall also make but few remarks upon the incidents of the excursion, and the speeches of the great men of the party. These have already appeared *in extenso* in the daily papers. Our purpose has been to take note more particularly of such matters as were likely to escape the observation of the reporters of the daily press.

At Great Bend, so called from the immense sweep which the river here makes to the south, the road enters the land of Penn again, and follows the valley of the Susquehanna till it reaches the Chemung at the town of that name, 270 miles from New York, via Piermont. We make a five minute's call at the large and beautiful town of Binghamton, connected with Utica by the Chenango canal, the former outlet for its trade. Here we were joined by Ex-Senator Dickenson and his wife and daughter, the only ladies of our party.

At this point of the road the traveller notices the commencement of a double row of half-decayed posts driven into the ground and following the general course of the track. In 1841, when a powerful effort was made to hasten the completion of this road, the company, acting under the advice of the then engineer, proposed to build the track on piles, and with a steam machine invented for the purpose, actually drove a double row over 100 miles long. Under a wiser management, however, this absurd plan was subsequently abandoned and the rotting piles stand forth in formidable array, as monuments of the folly of those who devised this novel mode of railway making.

We stop at Owego, connected with Cayuga lake by a branch railway 30 miles in length. This is also a fine town of 4,000 inhabitants, and next in importance to Binghamton on the route thus far. Our next halting place is Elmira, about the size of Binghamton, (5,000 inhabitants.) Here arrangements have been made for a grand reception, and we are to stop for the night.

Several volunteer corps, and the entire of the fire department, in uniform, with their rich flaunting banners, were drawn up in front of the platform of the station, so as to keep the vast crowd, assembled to do honor to the occasion, from encroaching on the cars. The whole scene was most imposing, and the arrangements for forming in procession, to escort the directors and their guests to the hotels allotted for them, were admirable. At 7 o'clock President Fillmore and his Cabinet were conducted from the cars and presented to the good citizens of Elmira and neighborhood, and received with three hearty cheers. After the delivery of a somewhat lengthy speech of congratulation, by a gentleman of the place, the procession formed and marched through the beautiful town to the large hotel kept by Mr. Haight, where Mr. Webster and about 200 of the party were left to take up their quarters.—President Fillmore and the rest of the excursionists, were escorted to Mr. Brainard's Hotel. At

both these splendid houses bounteous provision had been made for all by our liberal hosts, the board of directors.

President Fillmore, Mr. Webster, and the other members of his Cabinet, as also Mr. Seward, who joined us here, were severally called for, and made appropriate speeches. These having already appeared, as we before stated, in all the dailies, would not be interesting at this time to the readers of the Journal, so we omit them. All our party were struck with the magnitude and splendor of the two hotels at Elmira, particularly the Brainard House, which would do credit to New York. Indeed we doubt if there is any hotel in the city that can boast of a like number of so elegantly furnished rooms. The character of the hotels in a place are generally taken to afford good evidence of its refinement, as well as business capacity. Judging from this, and the air of comfort, every where visible in its streets, Elmira must be a very charming place for summer residence. It is decidedly the most thriving town on the whole line of railway. Hitherto it has owed its rapid growth to the Chemung canal, connecting it with Seneca Lake. By this outlet a large trade was carried on in lumber and agricultural products, which enabled it to supply an extensive district of Northern Pennsylvania with all kinds of goods, received in return for the above articles.

The Erie railway will doubtless add greatly to the prosperity of this fine town. The branch road to Jefferson, before referred to, sets off from the main trunk, a few miles west of the town; and to the south extends the Williamsport railway, now nearly completed, far into the adjoining State. It was here where General Sullivan attacked and defeated Brandt and his combined Indian and English force during the Revolution. It is also noted as the residence for a short period of the celebrated Talleyrand, and later of Louis Phillippe.

Elmira is 273 miles from New York, via Jersey city, and 187 miles from Dunkirk.

Next morning, May 15th, the trains were again in motion for Lake Erie at 6 o'clock. The country from Elmira to Corning, our next stopping place is very much the same as that passed after leaving Great Bend. It is rich in agricultural resources. Corning is 291 miles from New York and 169 from Dunkirk. It has a population of about 1,800, and is the last town of any dimensions on the road. The feeder of the Chemung canal is carried from hence to Elmira. Here another branch road to Buffalo, called the Buffalo and Cockeyton valley railroad has been commenced, a portion of which, to Bath, it is expected will be opened in August next. Corning is distant by this route 135 miles from Buffalo. The Chemung river looks as wide and pretty here as the Susquehanna.

After the usual ceremonies are over we proceed onwards. Crossing the Chemung one mile from Corning, the railway enters the less interesting and poorer valley of the Cannisteo, a branch of the above named river, and follows it to Hornellsville, 332 miles from New York, and 128 from Dunkirk. This is a place of about 1,000 inhabitants. From this point another branch is building to Buffalo, 90 miles distant, via Attica. Leaving this, our road follows the course of the Caniacadia Creek, and crosses the summit between the waters of the Cannisteo and Genesee river at a 50 feet grade. As we proceed the country gradually becomes less cultivated, and there are fewer objects to admire,

except the ingenuity and skill displayed by the engineers in finding a way for the railroad thro' so wild, rocky and desolate a country, as we are now approaching.

At Andover, a village of four hundred inhabitants, the train holds up again for five minutes, and in twenty minutes afterwards we are rolling along the Genesee, which empties its waters into Lake Ontario near Rochester. After following this river a few miles, the railway crosses over the ridge which divides the waters flowing into Lake Ontario from those running into the Mississippi, and we next invade the quiet village of Cuba, a place of eight hundred inhabitants situated on Oil Creek, a small tributary of the Alleghany. We are now in Cattaraugus county; shortly after we stop at Olean, on the Alleghany, three hundred and ninety-five miles from New York, and sixty-five from Dunkirk. At this point a considerable lumber trade is carried on by the river, a portion of which will doubtless be absorbed by the railway hereafter. At Great Valley sixteen miles further on, we called a few minutes, where the usual reception and speechifying took place. Here were several hundred Indians in their holiday dress, as well as a large concourse of white people, met to witness so marvelous a spectacle as our gaily decorated train presented, in these hitherto almost inaccessible regions. Most of these people had never before seen a locomotive, or railway car, having come from a distance of many miles. The appearance of so many of the natives of the forest, with their picturesque costumes, and astonished visages, in this wild secluded valley, excited general observation, and was regarded as quite an incident in our journey. But the woods soon echoed to the loud scream of the locomotive, far more savage in its notes than the fierce war-cry of the savage himself, and we dart along and shortly enter Chataque County, having its northern boundary on Lake Erie. We are now descending the valley of a small creek emptying into the Lake, which first becomes visible some fifteen miles from Dunkirk. The engineer announced this gratifying intelligence by a loud screech of the whistle, and one and all of our party gave three right hearty cheers for Lake Erie.

Presently after we were met by a deputation from Dunkirk, brought out by an engine, to announce the order of the day for the proceedings at the western terminus of the road. The second train shortly hove in sight, and being detached from its iron horse was joined on to ours. The sixty flags we had received, representing so many different stations, were now unfurled in a long line on the centre of the cars, and every preparation being made to enter Dunkirk with flying colors, we set out in fine style. Our train, now a quarter of a mile long, presented a magnificent spectacle as we entered the town about four o'clock, p.m., amidst the cheering of the vast multitude awaiting our arrival, and the firing of cannon—our band playing a lively air. What splendid preparations had been made by the good people of Dunkirk for celebrating this joyous and interesting occasion, in a manner becoming its importance, and commensurate with the magnitude of the great enterprise itself; what speeches were made by Presidents, Cabinet Ministers, Senators, and Governors; what good cheer the attentive directors had provided for their guests at the Loder Hotel; what champagne was discussed; what a banquet of roasted oxen, and sheep, and porkers, was spread out in the immense station-house, *pro bono publico*; what thousands of the youth, beauty, and manhood

of this fair region, and from Buffalo, and all the country round about, were assembled together; have not all these things been recorded in those enterprising chroniclers of passing events, the daily papers of New York? These and many other little incidents of this brilliant pageant at Dunkirk, including the bonfires and illuminations, would alone fill a dozen columns of the *Railroad Journal*.

The writer desires here to record for himself a pleasing incident of a personal nature, which occurred whilst noting the speeches at the Lode House; it was the accidental acquaintance which he made of a leading gentleman of the place, and his agreeable lady, and her sisters, of whose hospitalities, he and his travelling friend, (who represented the *Home Journal*) were invited to partake. It led to his making a visit to the delightful village of Fredonia, three miles distant from the Lake, to spend the night in a more comfortable manner than the over-crowded accommodations at Dunkirk admitted. Such civilities as those referred to ought ever to be held in grateful remembrance.

Of the village of Dunkirk but little may be said; it is a place of eight hundred or ten hundred inhabitants, and requires a large outlay yet to make a good harbor. We are of opinion that the good people there are destined to have their expectation respecting the rapid growth of their town disappointed. It will not be long before the Erie railway will be pushed further up the Lake shore, when Dunkirk will be a mere calling place. There is one thing that will always favor it, however. It has a fine back country, which will ever continue to make this their entrepot on the Lake. A more beautiful and rich farming district, is not to be found in the State of New York. The climate, too, is favorable, and the vegetation and foliage appeared to be nearly as much advanced as at the seaboard, and very much ahead of anything we had seen on the road.

We have now conducted the patient reader over the whole length of this gigantic private enterprize, and endeavored to give him some conception of the grandeur and variety of the scenery it presents to the eye, as he traverses this vast region of country; of the agricultural and commercial capabilities it develops, and at the same time to make him acquainted with the imposing ceremonies attending its formal opening. We had intended to have concluded with a condensed history of its commencement and progress to its final completion; but this must be deferred to another time. The New York and Erie railroad, when we regard its length, and the extraordinary difficulties to be overcome in crossing mountain and rocky barriers, in penetrating and pursuing the beds of numerous rivers and streamlets for hundreds of miles, now following a tributary of the Hudson, now the winding narrow defile of the Delaware, then pursuing its course along the beautiful vales of the Susquehanna and Chemung, which empties its waters into the Chesapeake Bay, and anon tracing streams for many weary miles which discharge themselves into Lakes Ontario, and Erie, and the Mississippi river—when we take all these things into account, the New York and Erie railroad lays high claims to being one of the greatest achievements of human skill and private enterprize. In the magnitude of the undertaking, and the cost of its construction, it far excels the hitherto greatest work of internal improvement in the United States—the Erie Canal. When we consider its length, which exceeds that of the great railway, building by the Russian government, from Moscow to St. Petersburg; when we reflect

upon the extensive tracts of country, teeming with rich products, it has opened up in the interior of New York and Pennsylvania, and when to these we add the vast amount of traffic it is destined to carry on, both in passengers and freight, between New York city and the great States of the west, it is doubtful whether any similar work exists on the earth to compare with it. Its benefits are already felt by millions, and millions more will yet experience them. By its means the vitality and energy which ever exist in the great and rapidly increasing city of New York, will be infused with almost lightning speed, over far distant and heretofore secluded settlements, carrying with them the blessings of increased civilization, knowledge, and refinement, freed from many of the vices of great cities. The country thus stimulated and improved, will send back to the city a rich and never-failing stream of supplies and products. Such are some of the advantages which this great work is already conferring, both on country and town. Let the croakers and false prophets who predicted that the New York and Erie road would never be completed, and if completed, would not pay running expenses, now hide their diminished heads and hold their peace forever after.

In conclusion, we would respectfully acknowledge the very handsome and liberal manner in which the President and Directors treated their guests on the excursion to celebrate the completion of their road. Many thanks are due to their gentlemanly Secretary, Mr. Marsh, for his unweary attention to the comforts of the party. These obligations were duly acknowledged by the guests at Narrowsburg, on our return trip, where appropriate resolutions were enthusiastically passed. What all must congratulate themselves upon, is the circumstance that the whole distance, of near a thousand miles, going and coming, was traversed without the slightest accident or mishap to any thing or any one connected with the trains.

East Tennessee and Georgia Railroad.

When at Cleveland this week we had an opportunity of learning of the progress of this road. Mr. Pritchard, the enterprising chief engineer, since he has taken charge of the work, has pushed it forward in a manner that has surprised even the most sanguine friends of the road. Almost without means—having to reap a scanty pay after his work was done—and against a general belief that there was a fatality attending the building of that road, that made many stand aloof, Mr. Pritchard has worked his way until he has crossed the Tennessee line with the cars, and now daily runs about 23 miles. The grading and superstructure necessary for laying down the iron on the balance of the road to Blair's Ferry on the Tennessee River, is nearly completed, and early in June "the snort of the iron horse" on a Tennessee road will be heard in Cleveland, and without much delay for compliments from the good citizens of that beautiful town, will strike out for its destination, and before a long season, salute the inhabitants round about Blair's Ferry. The completion of the East Tennessee and Georgia railroad, is destined to do great good in East Tennessee. Already the farmers and others along the lines, are inspired with hopes; land and other real estate has increased in price and value, greater industry is called out, and a healthy feeling exists among the people. The road will soon be completed at Knoxville—another carried through to the Virginia line—and yet another, now full under way, running through the rich valley of Western Virginia, and finally connecting with the great chain of roads to the northern Atlantic ocean.

A link between this ultimate destination and the Mississippi Valley is broken. That the great thoroughfare may be complete, it will be necessary to supply this link by building the "Chattanooga, Harrison and Cleveland road." The route is over

most favorable ground, through a rich country, and makes a direct connexion in our State between the Nashville and Chattanooga, and East Tennessee and Georgia railroads—shortening the distance, we believe, about thirty miles. This link can be must be supplied. With a proper effort, some, if not all the stock can be obtained along the line—but without home assistance, the road can be built by transfer of the charter to others. We hope something will be done to get this branch road soon under way before the meeting of our next Legislature.—*Chattanooga Gazette, 9th inst.*

From the London Mining Journal.

On the Use of Caustic Lime, instead of Limestone, in Blasting Furnaces.

BY GEORGE PARRY.

The results obtained at the Ougree furnaces by the use of quicklime, in lieu of limestone, are very striking; and the continued success attending its use seems now to have fully established its superiority. One of the causes assigned is the absence of the cooling effects, at a low region of the furnace, from the absorption of heat by the carbonic acid during its change of state—from the solid to the gaseous. In furnaces using so large a proportion of limestone as 21 cwt. to the ton of iron, as at Ougree, the effect on the temperature from that cause must be considerable, and tend to narrow the zone of fusion, thereby diminishing the power of the furnace in melting a certain weight of prepared material in a given time—that allowed for the combustion of a determinate quantity of fuel. Besides this, the presence of carbonic acid, as an oxydizing agent, is highly objectionable in that part of the furnace depended upon for the reduction of the ores; for, as it is well known, iron at a high temperature possesses the power of decomposing it by abstracting a portion of its oxygen. Again, if the ascending current of gas is really converted into carbonic oxide by contact with the superincumbent incandescent coke, its volume will be doubled, and its capacity for heat increased—hence another source of trigrophic influence on the furnace. Messrs. Bunsen and Playfair, (*Report of Iron Furnaces, British Association, 1845*), however, do not show that any such change takes place during the passage upwards; and their experiments were conducted with the most scrupulous regard to accuracy. The gases were taken from a furnace fed with bituminous coal, but only 36 feet high. Possibly the superior height of the furnace at Ougree, 54 feet, together with the circumstance of its being supplied with coke, proved the means of subjecting the gas to a higher column of incandescent carbon, and thereby have effected the change.

Ebelmen, on the contrary, gives an increase of carbonic acid in the upper part of the furnace; and the analyses quoted in Overman's work are in the same predicament. From these discrepancies it will be interesting to have the promised details of the examination of the gases made at Ougree. Little attention seems to be paid to the preparation of the materials supplied to furnaces, with the exception of the ironstone—every furnace man dreading the use of it imperfectly calcined, well knowing from experience the inability of the furnace to smelt it in the usual proportions. Yet it has passed through the kiln, and all its moisture has evaporated. What, then, can be the cause of its injurious effects on the action of the furnace? The presence of carbonic acid, with which the oxyde of iron is combined, the calcination not having been carried sufficiently high to expel it. The question of temperature at the zone of fusion, also, is generally confined to what can be done in its immediate locality, by applying blast as hot as can be obtained with safety to the heating apparatus—it requiring too great a stretch of the imagination to conceive how a slight difference, made at so distant a point as the mouth of a furnace can possibly effect its temperature at bottom. Such, however, is the fact; and one-half of the benefits conferred by the application of heated air may be easily nullified by inattention to this particular. It is not quantity of heat that we want in a blast furnace—it is intensity sufficient to create a more active play of chemical affinities in the laboratory of the furnace, and a more rapid and complete dissolution of the reduced minerals in the zone of fusion before they

reach that of combustion, and become re-acted upon by the oxygen of the blast.

In order to forward this desirable state of things from above, it must be considered that the temperature of the descending materials at any given point is always in *arrear* of that of the ascending current of heated gases, and will become *more so* the greater the quantity of volatile matter they contained at their introduction, whether they may be of a nature to become dissipated before they arrive at a state of incandescence—such as moisture—or after having passed that point, as the gaseous and other matters evolved during the distillation of coal, and the carbonic acid from uncalcined carbonates. The effect of these combined cooling influences is to allow the minerals, before they have attained a certain determinate temperature—say, that necessary for deoxidation or fusion—to be carried to a lower point in the furnace than otherwise would be, had they not existed. Thus the zone of fusion will have become reduced in breadth, and insufficient for performing its functions without encroaching on the zone of combustion below, with all its attendant evils—scouring cinder with loss of iron, bad yields, and inferior quality.

This is not all; the supply of fuel also reaching the blast at a correspondingly reduced temperature, is now unable to give out so great a degree of heat by its combustion; and this diminution goes on increasingly for some time, till an equilibrium is established. The modern domed-form of blast furnaces with a wide mouth, in a great measure counteracts the above defects, by effecting the absorption of more of the heat of the ascending current of hot gases than can be obtained by the old conical narrow-topped furnace; for at a certain limited depth the capacity of the former would be found fully double that of the latter; consequently presenting twice the surface of minerals to the action of the gases. These, also, in passing through this enlarged region, move with only half the velocity, and therefore, give double the time for the abstraction of their calorific. Hence it follows that by *doubling* the capacity of a furnace at the upper parts, or where the transference of heat goes on with the greatest rapidity from the continued influx of cold materials, *nearly four times* the amount is collected and carried down by the descending masses. That narrow tops consume a great deal of fuel, is an old and general complaint; and possibly the above considerations may afford an explanation of the cause.

The theory of *conduction* upwards cannot be admitted—there not being the slightest analogy between the transference of heat from the bottom to the top of a furnace, and from one end of a bar of iron to the other. The latter is a good conductor of heat while the furnace is filled with bad ores. It would take months to convey the heat through such a disintegrated mass by conduction alone; while the passage of the gases effect it in a few seconds. Practically, the heat would never reach the top by conduction; it would be dissipated by radiation from the sides of the furnace, faster than the loose matter in its interior would take it by conduction.

Ebbie Vale Iron Works, January 30.

Louisiana.

Opelousas Railroad.—The New Orleans Crescent states that at a meeting recently held in that city, upon the subject of the above work, Colonel Payne, who had recently visited the parishes of Opelousas and Attakapas, for the purpose of promoting the construction of this road, made a report, of which the following is an abstract:—

The distance from New Orleans to Washington, the point of embarkation for Opelousas, and within four miles of it, is 153 miles. The cost of the road is estimated at \$1,600,000. The Attakapas and Opelousas parishes have subscribed \$900,000. The Lafourche and Terrebonne and the river parishes will subscribe at least \$500,000 more. He submitted several calculations to prove that the road would be a fine investment in itself as mere stock, without reference to the enhanced value of adjacent property. The annual expense of transportation between the western parishes and New Orleans was \$590,000. The running expenses of

railroads in the United States was a fraction less than forty per cent. Deduct this, and it left \$354,000—twenty-two per cent. But he put rates at one-half, and then showed a large profit. The mere item of insurance was \$100,000, which would be saved to the planter.

He considers the extension of the road to the Sabine as a necessary consequence. This is about 150 miles from Opelousas, over a country of unsurpassed advantages for the construction of a road. Col. Payne states that the Attakapas and Opelousas country was the most beautiful he had seen out of Kentucky. It is four times as large as Massachusetts, and only requires accessibility to a market to increase its product ten fold.

Virginia.

Virginia and Tennessee Railroad.—Col. F. J. Boyd, of Wytheville has resigned his office as one of the directors of the above company. In speaking of his resignation and services, the Lynchburg Virginian says:—

"We cannot permit Col. Boyd to retire from the service of the company without a passing tribute to the value of his services, both in the employment of the company and in the cause of internal improvement generally. He has been devoted, might and mind, to the Virginia and Tennessee railroad from its inception to the present moment, and his last official act, of severing his connection with it, indicates an attachment to the work which is only equalled by the manly and disinterested manner in which he shows it. He is one of the pioneers of improvement in his section of the country, and is entitled, perhaps, to the credit of being the first politician in his country who was willing to risk his popularity in behalf of the cause. We have understood he is the *largest* subscriber to the Virginia and Tennessee railroad, in proportion to his means; and whether before the people on the stump, in the Legislature, or in the directory, the road has never called in vain for his valuable aid. The stockholders may well regret the loss of such an efficient co-worker in the cause.

Ohio.

Railroad Subscriptions.—The vote on Saturday last in favor of the city subscribing \$50,000 to the capital stock of the Junction railroad company, was almost unanimous, there being a hardly a respectable minority in opposition. There was not indeed opposition enough to contest the election spiritedly, and call out a full vote. The vote stood for subscription 170, against subscription 4! The citizens of Perrysburgh are to vote on Monday next, a subscription on the part of the corporate authorities of that place of \$17,000, which together with the amount formerly voted by that township, and the amounts voted by this township and city will make an aggregate of \$100,000 subscribed to this work at this point. This secures the location of this road beyond all contingency through Perrysburgh and Maumee.

The citizens of Troy, Wood county, and Woodville, Sandusky county, are yet to vote certain amounts to this road on the part of their respective townships.—*Maumee River Times.*

Railroad Depots in Charleston.

South Carolina Railroad.—We learn from the Charleston Courier, that the depots and workshops of this company are in a rapid state of progress. The Courier says:

Extensive improvements are in progress, which will soon render our railroad depository and workshops one of the most complete establishments of the kind in the Union. The square upon which the new buildings are erected, covers a considerable space of ground, bounded by Meeting, Columbus and Spring streets, and the railroad track leading to the passenger station in Hudson street. It embraces 270 feet on meeting, by 360 on Spring street, and contains a spacious finishing shop of two stories in height, 270 by 48 feet, at one end of

which are the offices, store rooms and stationary engine. This building is remarkably well supplied with light, having 36 windows on the street in each story. Adjoining this, is the boiler and blacksmith shop, (100 by 48,) and the foundry, (60 by 48 feet.) On one side of the square, is an iron and coal yard, and near the centre, "The Rotunda," or engine house, in which is a turntable, on an improved plan—by the use of which a material saving of labor is effected. The arrangement of these buildings, forming nearly a hollow square, along the west boundary of which the cars pass on their way up and down, leaves a spacious yard, ample sufficient for the conduct of all the out door operations of the establishment. The passenger depot and offices of receiving and delivery, are located a few squares below, and finished in very handsome style, with every convenience which can contribute to the comfort of travellers and the safety of their baggage. The depot is built in the heavy Gothic style of architecture, in the most substantial manner. The entrance on John street forms an elegant and imposing front, and the whole edifice is highly ornamental to this section of the city. The doors opening into the yard are numbered, and marked with the names of the principal hotels, a different door being assigned to each, and every precaution used to prevent confusion in the delivery of passengers or baggage at their proper destination.

Fire in the Coal.

In Wales a fire has been raging in a coal mine for 26 years, and has consumed, it is computed, \$500,000 worth of coal. Within five years after its commencement it was greatly restrained by the construction of an enormous wall which cost \$80,000. At present it is about passing this wall, threatening very extensive destruction, and learned engineers have been employed to consult on some new measure of arresting its progress.

Manufactures in Alabama.

The Mobile Tribune states that under the supervision of Mr. J. P. Perham, the Selma Manufacturing Company has got its foundry at Selma nearly ready for business. Steam engines, all kinds of mill and gin irons, blacksmith work, etc., will be made at the establishment. The company has a capital of \$22,000, a little more than one-third of which has been expended for tools and fixtures. They have now a beautiful steam engine, a furnace for melting iron, six turning lathes for wood and iron, one iron planer, circular saws, upright drills, and every kind of machinery for carrying on successfully the above kind of business. They have eight acres of land, which affords them plenty of room to enlarge their operations, as is their intention when the business increases so as to justify a larger investment. This establishment will give employment to over twenty hands this summer, and when in successful operation to double that number.

Pennsylvania.

Hempfield Railroad.—At a meeting of the board of directors of the Hempfield railroad company, held at the Monroe House in Wheeling, on the 7th day of May instant, Charles Ellet, Jr., Esq., was appointed Chief Engineer for said company. The board also agreed that from and after the first day of July next, the shareholders shall be entitled to receive interest at the rate of six per cent per annum on all instalments paid by them, and to continue to receive the same until the road shall be completed. It is expected by the board that as soon as the Chief Engineer can procure the necessary assistance, the road will be located with all convenient dispatch, and put under contract as soon as the circumstances of the company will admit.

JOSEPH HENDERSON,
Secretary.

Comparative Statement, Exhibiting the Total Receipts and Expenses per mile run of the principal Railways of Massachusetts, 1850.

NAMES.	Total number of mites run.	Total receipts.	Total receipts per milk run.
Worcester.....	436,199	749,527	Dollars.
Western	768,764	1,369,514	1
Providence.....	251,950	370,527	7
Taunton.....	21,939	62,973	1
New Bedford.....	40,710	94,043	4
Lowell	235,995	406,421	2
Nashua.....	65,399	129,380	3
Boston and Maine.....	468,590	592,443	1
Fitchburg.....	375,424	533,543	2
Vermont and Mass.....	164,121	177,695	1
Eastern.....	311,004	539,076	7
Old Colony.....	216,879	288,689	1
Fall River.....	138,072	210,081	5
Total	3,495,046	5,524,112	A.V. 1.5

Statement, exhibiting the Relative Cost of Passenger and Freight Transportation upon the principal Railways of Massachusetts, 1850.

FREIGHT DEPARTMENT.		NAMFS.	No. miles run by freight trains.	No. of tons carried in the cars.	No. of tons carried one mile.
Worcester.....	145,485	252,253	9,663,38		
Western.....	453,111	261,269	25,206,30		
Providence.....	61,120	104,303	2,229,15		
Taunton.....	6,914	39,003	400,03		
New Bedford.....	13,420	32,718	465,78		
Lowell.....	65,989	231,974	5,863,41		
Nashua.....	28,210	161,893	2,246,55		
Boston and Maine.	77,083	143,673	8,284,61		
Fitchburg.....	107,613	328,258	1,900,77		
Vermont and Mass.	48,419	106,287	1,000,77		
Eastern.....	37,443	71,586	1,829,53		
Old Colony.....	38,036	87,465	1,268,06		
Fall River.....	49,038	71,949	1,978,16		
Total	1,132,871	11,892,431	65,792,38		

FREIGHT DEPARTMENT.

TOTAL EXPENSES.			
Road bed.	Motive power.	Miscellane-ous.	
Dollars	Dollars	Dollars	
510,446	431,564	1,756,756	
2	2	2	
71,481	63,410	242,150	
121,656	114,651	371,242	
27,480	18,010	113,789	
4,926	7,608	22,874	
12,041	8,568	29,721	
56,028	48,977	151,653	
15,808	18,192	61,536	
66,449	45,008	178,021	
34,663	33,884	182,427	
29,722	10,732	67,190	
32,466	22,165	130,567	
32,089	26,267	132,645	
18,331	14,272	71,911	

14 A.V.	582	347,354	407,858	112,410	1,077,41	Number of tons carried each mile.
						Receipts from freight.
66	66	330,781	63,690	18,033	143,879	For salaries, wages, etc.
56	56	747,521	133,852	50,108	278,426	For repair of freight cars.
58	58	127,705	4,708	3,277	14,096	Proportion of other exp.
55	35	38,189	7,720	3,117	12,615	
58	88	221,211	41,585	6,949	114,593	
77	80	62,578	12,930	3,069	28,000	
77	77	270,568	44,410	9,376	100,442	
39	39	94,513	15,804	2,455	115,800	
49	49	67,574	8,938	1,100	58,075	
33	33	90,302	10,150	2,061	78,500	
40	80,767	16,596	4,773	35,050		

TOTAL EAF EINSE

Total.	Ratio of total expenses per cent.	Road bed.	Motive power.	Miscellane-	Total.
dollars.	dollars.	Dollars.	Dollars.	Dollars.	Dollars.
377,041	50 30	0 16	0 15	0 56	0 87
607,549	44 36	0 16	0 15	0 48	0 79
159,429	0 11	0 22	0 35	0 45	0 63
50,330	53 52	0 30	0 21	0 73	1 24
256,508	63 11	0 24	0 21	0 64	1 09
95,536	73 84	0 24	0 28	0 94	1 46
289,478	48 86	0 14	0 10	0 38	0 62
250,974	47 04	0 09	0 09	0 49	0 67
103,930	58 49	0 16	0 06	0 41	0 63
185,218	34 36	0 10	0 07	0 42	0 59
191,001	66 16	0 15	0 12	0 61	0 88
104,514	49 75	0 13	0 11	0 52	0 76
Av. 49 02	Av. 0 15	Av. 0 12	Av. 0 50	Av. 0 77	

		Total.		Ratio of the freight expenses per cent.
Dollars	Dollars.	Dollars.	Dollars.	
225,600	68,20	105,181	31,80	2,27
462,383	61,86	285,138	38,14	1,65
74,490	58,33	55,215	41,67	1,02
10,110	78,52	5,955	21,47	0,66
23,050	60,36	15,139	4,01	0,66
163,070	73,73	58,141	3,15	0,88
44,001	70,31	18,577	2,90	0,88
10,400	70,82	54,837	2,30	0,66
169,588	62,71	100,894	2,43	0,72
65,273	69,69	29,297	2,43	0,72
68,113	100,80	.....	2,43	0,72
90,784	100,53	.....	2,43	0,72
56,392	69,82	24,375	30,18	1,65
1,597,683	Av. 68	749,671	Av. 31	2 97
		Net income fm freight.		Ratio of net income fm freight per cent.
Dollars.	Dollars.	Dollars.	Dollars.	
225,600	68,20	105,181	31,80	2,27
462,383	61,86	285,138	38,14	1,65
74,490	58,33	55,215	41,67	1,02
10,110	78,52	5,955	21,47	0,66
23,050	60,36	15,139	4,01	0,88
163,070	73,73	58,141	3,15	0,88
44,001	70,31	18,577	2,90	0,66
10,400	70,82	54,837	2,43	0,72
169,588	62,71	100,894	2,43	0,72
65,273	69,69	29,297	2,43	0,72
68,113	100,80	.....	2,43	0,72
90,784	100,53	.....	2,43	0,72
56,392	69,82	24,375	30,18	1,65
1,597,683	Av. 68	749,671	Av. 31	2 97
		Receipts fm freight per mile run.		Expenses of freight per mile run.
Dollars.	Dollars.	Dollars.	Dollars.	
225,600	68,20	105,181	31,80	2,27
462,383	61,86	285,138	38,14	1,65
74,490	58,33	55,215	41,67	1,02
10,110	78,52	5,955	21,47	0,66
23,050	60,36	15,139	4,01	0,88
163,070	73,73	58,141	3,15	0,88
44,001	70,31	18,577	2,90	0,66
10,400	70,82	54,837	2,43	0,72
169,588	62,71	100,894	2,43	0,72
65,273	69,69	29,297	2,43	0,72
68,113	100,80	.....	2,43	0,72
90,784	100,53	.....	2,43	0,72
56,392	69,82	24,375	30,18	1,65
1,597,683	Av. 68	749,671	Av. 31	2 97
		Net income fm freight per mile run.		Net income fm freight per mile run.
Dollars.	Dollars.	Dollars.	Dollars.	
225,600	68,20	105,181	31,80	2,27
462,383	61,86	285,138	38,14	1,65
74,490	58,33	55,215	41,67	1,02
10,110	78,52	5,955	21,47	0,66
23,050	60,36	15,139	4,01	0,88
163,070	73,73	58,141	3,15	0,88
44,001	70,31	18,577	2,90	0,66
10,400	70,82	54,837	2,43	0,72
169,588	62,71	100,894	2,43	0,72
65,273	69,69	29,297	2,43	0,72
68,113	100,80	.....	2,43	0,72
90,784	100,53	.....	2,43	0,72
56,392	69,82	24,375	30,18	1,65
1,597,683	Av. 68	749,671	Av. 31	2 97

EXPENSES PER MILE RUN.

Total net income.	Ratio of total net income per mile run.	Total net income per mile run.
Dollars.	Dollars.	Dollars.
372,456	49	85
761,955	55	99
211,448	57	84
26,555	42	1.21
43,713	46	48
149,913	36	89
33,844	26	16
302,985	51	14
282,569	52	96
73,765	41	51
353,858	65	64
97,689	33	84
105,567	50	25
2,816,346	AV. 50	98
AV. 50	98	AV. 081

		per mile run		
		Receipts fm freight per ton carried one mile.		Expenses of freight per ton carried one mile.
Sec	Av.	Cents.	Cents.	Cents.
2	3,423	2,335	1,088	996
3	2,965	1,834	1,131	996
7	5,747	3,535	2,395	996
6	6,932	5,443	1,489	996
3	8,238	4,977	3,266	996
7	3,774	2,783	1,299	996
6	2,785	1,958	0,827	996
1	4,208	2,980	1,228	996
4	3,266	2,018	1,218	996
0	4,972	3,434	1,538	996
3	3,692	3,723	1,538	996
7	121	7,159	1,538	996
0	4,083	2,851	1,232	996
Av. 3,567		Av. 2,428		Net income fm freight per ton car- ried 1 mile.
Av. 1,139				

Statement, exhibiting the Relative Cost of Passenger and Freight Transportation upon the principal Railways of Massachusetts. 1850.

125 **Railroad Iron.**
2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by **KAYMQND & FULLERTON,** 6:21 45 Cliff st.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen, \$1 50	6 oz. per dozen, \$0 50
Pints, " 1 00	4 " 0 37
8 ounces, " 0 62	2 " 0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by 21st

THEODORE LENT.

Mohawk Valley Railroad.

THE BOOKS of SUBSCRIPTION TO THE Capital Stock of this Railroad will be opened at the Chemical Bank, and at the office of Arthur N. Gifford, No. 60 Merchants' Exchange, on the 13th instant. The Report of the Survey and Estimates may be obtained, and a Map and Profiles of the route seen, at the latter place.

May 17th, 1851.

A. C. FLAGG,
JAMES J. ROSEVELT,
A. MANN, JR.,

21st Committee.

AMERICAN RAILROAD JOURNAL.

Saturday, May 24, 1851.

Stock and Money Market.

The stock and money market presents pretty much the same aspect which we have noticed for a month past. Prices vary but little from one week to another, notwithstanding the rapidly increasing receipts upon most roads. There is but little speculative feeling, and the stock market is in an unusually healthy condition. Money is very abundant, with every appearance of its continuing so during the season.

The securities of new works are dull, and are disposed of with some difficulty. There is a great difference in the ease with which bonds are sold between this year and last. The cause of this is not readily understood by those who look only at the present abundance of money. The purchase of railroad bonds for investment, though now an immense business in this city, is of recent date. A large majority of those offering are of companies at a distance, whose standing and means cannot at once be made known to the great mass of purchasers who buy to hold. The credit which it is necessary that every security should have to secure to it the confidence of the retired capitalist, and to the still more numerous class of persons who have but a few thousand dollars to invest, is of slow growth. No matter how good the security, the purchaser must have time to ascertain this fact. Attention has but just been called to the roads of the west, from whence comes the greatest demand for money, and though a very favorable feeling exists in reference to them, yet we cannot expect that their bonds will be taken as readily as those of eastern roads. A few years more, when the further extension of railroads shall have brought about a more intimate acquaintance between the more distant parts of our country, will place western roads on as favorable a footing as those of our own State.

During the past season, most of the bonds offering were readily taken up by brokers, and by par-

ties formed here, in large quantities, who bought for the purpose of selling again in smaller lots. Most of these parties, tempted by the wide margin which the companies were willing to allow, completely gorged themselves with these securities; and though they are constantly working them off, they are not selling by any means as fast as new ones are offering. The offerings are greater than the real demand, and as the condition of our brokers does not allow their taking upon speculation, as last year, railroad companies must wait the slow, but certain demand, which does now and will continue to exist for investment. The condition of things is favorable to a healthy growth of our roads. They are now probably obtaining money as fast as is consistent with a general healthy condition of trade.

The rail market continues about the same as per last advices. The lowest quotations are £5 free on board.

The following traffic table shows a very large increase in the earnings of our roads.

Utica and Schenectady Railroad.—The following is a statement of the amount received for transportation of passengers in April, and from May 1st to 14th, 1850; also, in April, and from May 1st to 14th, 1851:

1850.—April	\$55,212 01
1850.—May 1st to 14th	25,566 09
	\$80,778 10
1851.—April	\$52,149 99
1851.—May 1st to 14th	20,314 45
	\$72,464 44

Decrease in 1851 \$8,313 66

The tolls on this road have been reduced nearly 40 per cent since the past year. The above result, therefore, may be considered as very favorable to the road, and indicates a great increase of travel.

Mad River Railroad.—Some have feared that that the opening of the Cleveland and Columbus railroad would seriously affect the receipts of the Mad river and Lake Erie railroad. It appears, however, by a report from this company, that the receipts for April, 1851, were \$34,831 64 For April 1850 33,189 29

Increase over last year \$1,642 35

Peru and Indianapolis Railroad.—The receipts and expenditures on the road between Indianapolis and Noblesville from the 11th of March, the day of the opening of the road, to the 2d of May, inclusive, were as follows:

Receipts from passengers	\$1,410 61
" freight	735 91
	\$2,146 52

Expenditures 731 75

Profits \$1,417 77

Being at the rate of about 8½ per cent per annum on the cost of construction.

Vermont and Massachusetts Railroad.—The receipts of this road for April were \$17,996 72 In same month last year 14,593 66

Increase this year 23½ p. ct. \$3,403 06

Cheshire Railroad.—The receipts of this road for April were 19,343 53 April, 1840 15,325 85

Increase \$4,017 68

Boston, Concord and Montreal Railroad.—The receipts on this road for the month of April were \$12,336 06 For April 1850 10,396 65

Increase \$1,930 41

Rutland Railroad.—The receipts of this road for April were \$22,300 00 Same month last year 12,551 62

Gain this year \$9,749 33

Mohawk Railroad.—The receipts of this road for the month of April were as follows:

Passengers	\$14,662 44
Freight	10,314 71
Expresses, &c.	273 69
Total	\$25,250 84
April, 1850	20,075 00

Increase, 25 per cent \$5,175 84

Norwich and Worcester Railroad.—The following are the receipts of this road for the months of April, 1850 and 1851:

1850.	1851.
Through travel	\$1,111 25
Local travel	7,370 80
Freight	11,468 87
Mails, &c.	1,466 86

Total \$21,417 28 23,006 13

Increase in 1851 \$1,588 85

Michigan Central Railroad.—The earnings of the Michigan Central railroad for April, as compared with same month last year, were as follows:—

1850.	1851.
Freight	\$18,295 46
Passengers	35,597 45
Total	\$58,892 91
	\$90,267 96

Increase \$36,375 05

Equal to 67½ per cent in advance of last year.

SALES OF STOCK IN NEW YORK.

	May 15.	May 22.
	Sales.	Sales.
U. S '67 Loan	117½	117½
Erie R.R.	88½	89½
Harlem R.R.	73½	74
Stonington	43½	42½
L. I. R.R.	22	21½
Norwich & Wor.	64½	64½
Del. & Hudson	121½	121½
Reading	54½	56½
Morris Canal	16½	16½
Erie income	97½	97½
" Bonds	102½	103
Canton	75	75
Farmers Loan	69	69½

SALES OF STOCKS IN BOSTON.

	May 14.	May 21.
Old Colony Railroad	66½	68½
Boston and Maine R.R.	105	105½
Eastern Railroad	102½	102½
Fitchburg Railroad	112½	113
Michigan Central Railroad	99½	104
Northern Railroad	60½	71½
Vermont Central Railroad	36½	36½
Vermont and Mass. R.R.	30½	30½
Western Railroad	105	103½
Ogdensburg Railroad	40½	46½
Rutland Railroad	57	57½
Boston and Worcester Railroad	106	106½
Rutland Railroad Bonds	97	97
Ogdensburg Railroad Bonds	97	97½
Vermont Central R.R. Bonds	91½	91½
Boston and Providence R.R.	89½	90
Philadelphia, Wilm'gton & Balt.	29½	29½
Concord R.R.	53½	54

Mohawk Valley Railroad.

Our readers will find, in another column, a notice of the opening of the books for subscription to the stock of this company.

We have received the circular of the directors, with a copy of the engineer's report of the survey of the route, and had prepared a notice of it, which is necessarily excluded from our present issue, by our lengthened notice of the opening of the Erie railroad. We shall give it in our next.

Opening of the Erie Railroad.

We give in another part of our paper, an account of the opening of this stupendous work.—The occasion was an era in the history of locomotion in this country. The influence of this road will at once be felt in every part of the United States. For New York, it is a crowning achievement, and will, in connection with other lines, to the progress of which it will give a vast impression, soon form a continuous line of railroad to the Mississippi river. The mountain heights have been scaled, the valleys beyond have been reached, and an onward march is an easy task. The Erie railroad is the grand artery between the Atlantic and our inland seas. Its branches compared with other trunk lines, would be great works. In New York and Pennsylvania alone, in the roads to which it has given birth, and which are now in progress, it will be the means of building a greater extent of line than its own length. Such are some of the first and obvious results of this great work. New results will develop themselves every year.

We had prepared and had intended to accompany the notice of the opening of the road, with a brief history of its progress, and more full statistics of its capacities for business, equipment, etc. But this we must defer to a future number. Such an account can hardly be less interesting, while it may be more instructive, than the account of the opening ceremonies.

New York.

Canandaigua and Corning Railroad.—The iron for this road is now arriving in this city, and is being forwarded to the line of the road. It is stated that this road will be in operation in July next. The track of this road has the line gauge 6 feet.

Georgia.

Georgia Railroad.—The annual meeting of this company was held at Augusta a few days since.—The usual report was submitted, and presents the following statement of the operations of this road for the past year:

The gross earnings of the company from railroad operations, for the year ending 31st March last, were. \$728,923 15 And the expenses of management..... 302,437 10

Leaving net profits from road operations..... \$426,486 05 The business operations and resulting profits of the company, from all sources, for the past fiscal year, may be briefly stated thus:

Gross earnings of the road as above. \$728,923 15 " of the bank..... 55,485 49

\$784,408 64

Charged with road expenses..... \$302,437 10 Charged with interest on bonds..... 45,861 56 Charged with expenses of bank, including bank taxes, &c..... 15,224 59—\$363,523 25

Net income from all sources..... \$420,885 39

Two dividends have been declared from these profits of \$3 50 per share, each, or seven per cent per annum, on the capital stock, amounting to \$280,000, and leaving surplus profits applicable to other purposes of \$140,885 39.

It will be perceived that the gross profits of the road compared with the year preceding, have increased \$102,116 13, whilst the net profits have only increased \$27,961. And whilst the gross receipts from all sources have increased \$140,885 39, the net profits have increased only \$35,169 20.

This diminution of net profits, in proportion to gross receipts, has been occasioned, in part, by increased taxation—but mainly by the great advance

in the price of labor, materials and provisions, as stated in the reports of the resident engineer and superintendent of transportation. It is, however, to be observed, that our expenses still continue to compare favorably with the best managed roads in the country.

New Hampshire.

Boston, Concord and Montreal Railroad.—The fifth annual report of this company gives the following statement of its affairs. The road is now completed from Concord to Warren, 70 miles, and within 22 miles of Wells river.

The cost of the seventy miles now constructed is..... \$1,434,972 76 The cost of the cars, engines and equipment..... 132,099 86

\$1,567,072 62

And the road is so thoroughly constructed that few additional expenditures will be required.

The capital paid in is..... \$1,118,742 25

The bonds authorised and secured by mortgage, \$500,000, of which have been sold..... 296,500 00

The floating debt..... 179,328 00

\$1,594,570 25

The floating debt is to be paid off by the sale of remaining bonds. The gross receipts have been for the year \$144,835 71, deducting the amounts paid other roads \$43,576 71, and running expenses and repairs \$52,632 61; and the net income on the portion of the road in use is \$48,626 38.

The remaining twenty-two miles have been carefully re-surveyed during the year. The report estimates the entire cost of the same at \$420,706.—For contingencies and additional cars it estimates \$79,000, making the entire additional investment \$500,000.

The mode of providing the remaining \$500,000 is referred to the consideration of the stockholders, at the annual meeting on the 27th.

Mississippi and Atlantic Railroad.

The directors of this company, nothing daunted by their failure to obtain a confirmation of their organization under the general railroad law of that State, are busily engaged in the steps preliminary to the commencement of the work of construction, such as securing the right of way, raising subscriptions, etc. The true policy for those interested in this work is to obtain a charter to build a road from Terre Haute to the line of the Central road, which would at once bring into profitable use that portion of it. By the time that the above point could be reached, the State would so far abate its exclusive policy as to give the asked for charter. The Ohio and Mississippi road will undoubtedly be speedily built, and a through route can be formed by using part of the three roads named. One great object for which the Mississippi and Atlantic road was projected would thus be secured; but we have no doubt but that by commencing at Terre Haute, the State would relax its present policy as soon as it shall be for the real interests of the company to have her do so. The above road is a very important one, and the whole country is interested in its construction.

In this connection we may state that the Terre Haute and Indianapolis railroad will be completed this fall. The Indianapolis and Bellefontaine railroad, 83 miles long, to the Ohio State-line, will be completed in the fall of 1852, when it is probable that a continuous line will be in operation from New York to the State-line of Illinois. There it will wait for a time apparently before it can be allowed to push forward direct to St. Louis.

Anthracite Beds of Rhode Island.

Continued from page 299.

The experiments of Dr. Hayes, to which we alluded in the former article on this subject, were conducted on a large scale at the Roxbury Chemical Works, near Boston. One hundred and fifty tons of Rhode Island coal were consumed in these trials, and the results registered are upon the consumption of fifty of these. The object of the experiment was to determine the evaporating power of the coal, compared with that of one of the best qualities of Pennsylvania anthracites. The variety selected for this comparison was the "Pine Knot," from the "Miller vein," which is highly esteemed about Boston. "To make the conditions equal, a rapid evaporation was produced in both cases, and the time made to correspond. The trials occupied about 72 consecutive hours for each, and were alternated, so as to begin the week with one and end with the other, reversing for the next week, so that the influence of the increased heat of the furnace might be equalised on each. The clinkers from each kind were weighed after large portions of coal had been burnt."

"It was first determined that by the arrangement of furnace and boilers adapted to the combustion of anthracite, thirty hours average time allowed 10,000 lbs. of Portsmouth coal to burn completely. This quantity gave as a mean result deduced from many trials, 63,525 lbs. water converted into steam.

Pine Knot coal could be burnt more rapidly, but when 8,630 lbs. were burnt in 30 hours, a mean of many trials, 63,525 lbs. of water were evaporated.

The clinkers from 10,000 Portsmouth coal weighed 1,190 lbs., from 10,000 Pine Knot coal, 1,356 lbs.

It hence appears that 10,000 lbs. of Portsmouth coal correspond to 8,630 lbs. of Pine Knot anthracite; 10,000 lbs. of Portsmouth coal cost 17·28, and its equivalent 8,630 lbs. of Pine Knot, at the lowest price it has yet sold for, cost 21·17; the present price being much higher.

Having thus determined the economical value of the Portsmouth coal, it became a point of interest to endeavor to learn how far the length of time required to burn it influences its application for generating steam. It was therefore mixed with Pine Knot coal in the proportion of equal weight, and this mixture was burned in the shortest time the apparatus permitted; 8,650 lbs. of this mixture burnt in 26 hours, evaporated 63,525 lbs. of water, or within a fraction the mixture was equal to an equal weight of Pine Knot coal."

Mixed with bituminous coal, the clinkers formed melted into a solid mass. With "free burning anthracite," by which we understand Dr. Hayes to mean anthracite partially bituminous, he infers excellent results will follow. "In a given weight," he remarks, "the Portsmouth coal contains a larger amount of carbon, than exists in the same weight of dry anthracite, but its compactness and graphitic character prevent it from consuming rapidly, and hence any means for increasing its combustibility, by diminishing the time necessary, adds to its value as fuel."

"The difficulty, owing to its compactness, with which it kindles, renders it less convenient for small fires than the more combustible anthracites, yet when properly managed in an open grate, it produces a very enduring and cleanly fire."

For further particulars, relative to the suitability of this coal for smelting purposes, its physical characters, and advantages of position, we would

refer to the report itself. From Dr. Hayes we have personally gathered a few further data which will be interesting.

The ashes of the coal are less in weight than of the Pennsylvania anthracites, but more bulky.—The freight of coal from the Delaware river to Boston is from \$1 25 to \$1 50 per ton. From Rhode Island it is about half these rates. A cubic foot of Rhode Island coal, broken to egg size, weighs 59·5 lbs.: of the Zerby's Run semi-anthracite, 48 lbs.: of small red ash anthracite, 57·5 lbs.: of Pine Knot, 54 lbs.: of Pictou bituminous coal, 49·5 lbs.

We will now close these remarks with an account of two localities, which we have recently examined in the vicinity of the Portsmouth mine.

The former of these is on the east side of the island, opposite the Portsmouth mine, and about a mile and a half east of it. Here, near the summit of the high hill, which rises from the bay towards the west, is the outcrop of a coal bed, the inclination of which towards the central axis of the island seems to indicate that it is one of the same beds, which are found on the west side dipping towards the east. The bed was opened and partially wrought in 1808, but soon after abandoned. The shaft and gallery have since remained full of water, except for a short time in 1849, when they were cleared out, and then examined by Dr. Jackson, whose report accompanies that of Dr. Hayes. It is there spoken of as the "Portsmouth mine," in the neighborhood it is generally known as "Case's mine." Dr. Jackson represents the shaft to be 75 feet deep, and the coal bed 13 feet thick. At the mines on both sides the island, he observes that the coal near the surface was much disintegrated, becoming more compact with the depth. He regards them all as crushed beds, consequently liable to a greater waste in small coal and dust than is usual in other mines of anthracite; still, however, this is not to be regarded of so much consequence, as the fine coal and dust now finds a market at remunerating prices. He adds that he was favorably impressed with the appearance of the coal bed—that it was in a much better state than he supposed it would be after having been so long exposed to the action of air and water.

In our visit we could only see what the surface presented. The shaft was at an elevation of about 100 feet above the water. Loose coal was scattered about near it, the appearance of which promised well as to the quality of the bed. It was favorably situated for mining; for by reason of the elevation of its outcrop an adit might be driven up from the level of the wharf from which the coal would be shipped—thus draining off all the surface water, and affording a convenient level roadway for bringing the coal out. Though the adit, in consequence of the dip being away from the water, would be across the strata, and of much greater length than if the dip were the other way, it would be for the same reason very likely to cut other parallel coal beds, which might all be worked by means of the same level.

The accounts of intelligent people living in the vicinity agree with the report of Dr. Jackson, in representing the thickness of the bed as very considerable, and the quality of the coal is stated as not differing materially from that of the coal on the other side of the island. From such data, we could not but form a favorable opinion of the inducements here offered for the investment of sufficient capital to work this mine; and so recom-

mend it to the attention of those who may be disposed to engage in an enterprise of this kind.

The other locality, where a coal bed of promising character has been discovered, is in the town of Bristol, at the head of one of the principal wharves. A well was sunk here last winter to furnish water to a large sugar refinery. After going sixteen feet through sand and gravel, a coal bed was struck, in which the well was sunk, as I was informed, sixteen feet further, without getting through the coal. It was then walled up, and all that can now be seen is a great open pit about fifteen feet across, nearly full of water. A heap of coal lies upon the surface, which was taken from the well—and though from the very outcrop, where it was unprotected by a rock roof, it has been used by families for their winter's fuel. We saw it burning freely in an anthracite cooking stove to the satisfaction of the family using it. They had a large pile of it stored away in the cellar close to the well. It certainly is very remarkable to find good sound coal so near the surface. One cannot but be surprised it should burn at all. It appears that the bed must be as large or larger than either of the others, and so far as can be ascertained, the quality of the coal is not inferior.

Its outcrop is not very far above the level of the water, and as the bed dips, (according to the statements of those who had seen it opened,) towards the water, and must soon pass under it, it will be important to lay out the workings in such manner as to preserve the bed untouched near the surface, and only work it at a depth that will secure a considerable thickness of strata between it and the water of the bay over head. This presents no serious difficulty, and with the work judiciously begun, there can be no question as to procuring large supplies of coal at this point, with no great expenditure beyond the first cost of a large steam engine and pumps. Coal beds intercept the water that flows down to their surface, so that workings under them may be very dry, as long as the upper layers of coal are not shattered.

As this bed along its lines of outcrop to near the north reaches farther back from the wharves, it may be opened at some point more in the village, if suitable room can be obtained.

Other localities also, on the island, as well as on the main land, present sure indications of extensive coal beds; and altogether we regard these points as holding out strong inducements for their thorough development, by the employment of large capital. From enterprises begun and conducted as the former have been, none but the same results which they experienced, can be anticipated. But by seeking for the coal at suitable depths—by the application of proper machinery—by judicious care in sorting and preparing it for market, and by proper advice how it should be used, and for what purposes it is best adapted, it must be largely employed, when it can be afforded at rates so much less than the Pennsylvania anthracites. Narragansett Bay already receives large supplies of mineral fuel for the manufacturing towns on its shores.—Conveniently situated as the State of Rhode Island is, between the great markets of New York and Boston, abounding in good harbors, and connecting directly with the interior by the Providence and Worcester railroad, nothing more is wanting for the almost unlimited extension of its manufacturing establishments, than cheap motive power and fuel. That this coal may be advantageously employed to supply these wants, seems to be estab-

lished by the experience of those who have used it on a large scale. It is probable that for smelting iron ores, and for many purposes connected with the working of iron and other metals, it may be well adapted; and as this is proved to be the case, will such works spring up in the vicinity of the coal mines, giving a home market to their productions, and adding no little to the value of property around them.

The Portsmouth Coal company is now actively engaged in bringing about these results; and another company will probably be soon formed in Boston, to engage in the same enterprise. The establishment of both will be mainly owing to the perseverance and good judgment of J. R. Barbour, Esq., of Worcester, Mass., who some time since became persuaded of the great value of these beds, and zealously set himself to work to prove it. We wish him all the success that enterprise and industry ever merit.

J. T. H.

Kentucky.

Covington and Lexington Railroad.—This company have made contracts for grading the greater portion of the road between Falmouth and Paris, including the masonry of the bridges. The grading of a few sections, and the masonry of two or three bridges is not yet let. The company will make contracts for this work immediately, and without advertising further.

Business on Canals.

Wabash and Erie Canal.—The business on the Wabash and Erie canal continues to show a large gain, as will be seen by the annexed statement: Receipts for tolls during the month of

April \$26,881 15
During same month last year 20,434 79

Increase.....	\$6,446 36
Receipts from sales of land April, 1851.	\$14,110 76
" " " 1850.	7,725 19

Increase.....	\$6,385 57
Receipts from sales of lands for 6 months ending May 1, 1851.	108,560 21
Receipts from sales of lands for 6 months ending May 1, 1850.	42,627 41

Increase, over 150 per cent.....	\$65,932 80
The breach in the Wabash and Erie canal, of which mention was made a few days since, consisted of the washing away of a culvert near Lewisburg, which was speedily repaired, with but little interruption to navigation.	

The aggregate quantity of flour, wheat, corn and barley left at tidewater from the commencement of navigation, to the 14th May, inclusive, during the years 1850 and 1851, is as follows:

	Flour, bbls.	Wheat, bu.	Corn, bu.	Barley, bu.
1850.....	189,662	60,307	246,239	88,887
1851.....	458,201	178,426	1,069,208	43,090

Inc....	268,539	118,119	822,969	dec. 45,797
The amount of tolls received on all the New York State canals, from the opening of the canals up to the 14th instant, inclusive, is as follows:—				

4th week in April, 1850.....	\$178,794 45
1st week in May.....	80,477 93
2d week in May.....	103,989 41

Total.....	\$363,261 79
3d week in April, 1851.....	\$151,270 31
4th week in April.....	146,627 55
1st week in May.....	112,105 10
2d week in May.....	112,456 84

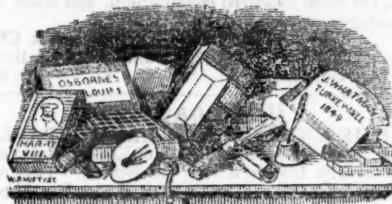
Total.....	\$522,459 80
Excess or increase in 1851, \$159,198 01.	

It will be remembered that a reduction has been

made in tolls from those of last year. The increase of business is enormous.

Welland Canal.—During the week ending 13th inst., 136 vessels passed the Welland canal, of which 74 passed up and 62 down. Of the vessels passing down, 37 were bound to Oswego, 13 to Kingston, 4 to Ogdensburg, 4 to Montreal, 3 to Toronto, and 1 to Hamilton. The vessels going to Montreal were loaded mostly with flour and pork, and those to Kingston with staves, timber and coal.

Huffy's
Engineers, Architects and Draftsmen's
STATIONERY EMPORIUM.



WHATMAN'S Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books.

All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFFY,
Successor to H. L. Lipman,
139 Chestnut st., Philadelphia.

May 15, 1851.

1851. 1851.
PEOPLE'S OSWEGO LINE,
New York and Oswego,

RE prepared for the Transportation of Merchandise and Produce to and from New York, and ports on the Western Lakes, by the Lake Ontario and Welland Canal route. Special attention given to Railroad Iron.

PROPRIETORS.
LEWIS & BEARDSLEY, Oswego.
JAMES W. CAMPBELL, New York.

AGENTS.
James W. Campbell, 111 Broad st., New York.
W. H. Clark, 60 Quay st., Albany.
Lewis & Beardsey, Oswego.
Smith & Hunt, Toledo, Ohio.
G. W. Bissell, Detroit, Mich.
C. Walker & Son, Chicago, Ill.
H. H. Hurlbut, Western States.
May 15, 1851.

Notice to Contractors.

Pennsylvania Railroad.

PROPOSALS will be received from the 9th to the 12th of June next, at Johnstown and Summit, for the Grading and Masonry of that part of the Mountain Division of the Pennsylvania Railroad between Altona, in Blair county, and Pringle's Point, a few miles below Jefferson, in Cambria—a distance of 25 miles.

The road within this distance will cross the Allegheny mountains, encountering some of the heaviest grading offered in this country. In addition to a number of extensive cuttings, embankments and culverts, there will be one tunnel 1200 yards in length at the summit of the mountain, and another of 200 yards through Pringle's Point.

Terms cash, monthly. For further information apply to EDWARD MILLER, Esq., Associate Engineer, Blairsville, Indiana Co., or to STRICKLAND KNEASS, P. A. Engineer, Altona, Blair county.

J. EDGAR THOMSON,
Chief Engineer.
Engineer Department P. R. R. Co.,
Philadelphia, May 1st, 1851.

NOTICE.

THE Subscribers hereby give notice that they sold out their interest in the New York Iron Bridge Company on the 29th of April last to M. M. WHITE, and that their interest in the Company ceased on that date.

W. RIDER & BROTHERS,
ELIHU TOWNSEND.

The business of the New York Iron Bridge Co. will be continued as formerly by the Subscriber, who respectfully solicits orders for bridges as heretofore.

M. M. WHITE, Agent
New York Iron Bridge Company,
39 Wall st., Jauncey Court.

New York, May 13th, 1851. 3t

Spikes, Spikes, Spikes.

ANY person wishing simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6, 1850.

To Railroad Companies.

SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.
**Lovegrove's Patent Cast Iron
Water and Gas Pipes.**

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greensville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

**To Engineers and Ship
Builders.**

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

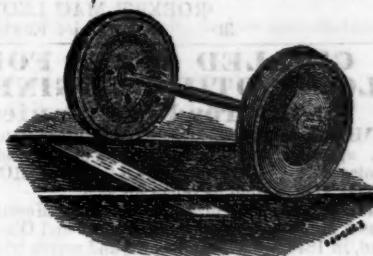
Address ENGINEER, box 2315 lower Postoffice.

Boston Locomotive Works,

—Late Hinkley & Drury—
No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Rail-Road Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF
Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and
Planing Machine Knives:

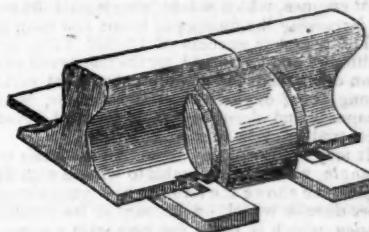
NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

W. M. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

**Railroad Iron,
SPIKES, AND
WROUGHT IRON CHAIRS.**



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at office, No. 20 Beaver st.
CHARLES ILLIUS.

SHOW To Contractors.

Engineer's Office Central Ohio R. R.
Zanesville, May 7, 1851.

SEALED Proposals will be received at this office until the 1st of June next, for laying the Track upon the whole line, including sidings—about 63 miles—west of Zanesville.

Plans and Specifications will be exhibited after the 20th day of May.

By order of the Board.

ROBERT MAC LEOD,
3rd Chief Engineer.

CHILLED TIRES FOR LOCOMOTIVE ENGINES.

To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded in durability those of wrought iron, while their first cost, and expense of repairs, is more than *forty per cent. less*. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have *four wheels as drivers*, with frequently a weight of *sixteen tons*, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the *track* is like a car with *sixteen tons upon four wheels*, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight *necessary for adhesion* may be distributed upon more *driving wheels*, without any material disadvantage to the engine, and thus placing *less weight upon a single point*, would relieve the *track*, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of *increasing the number of trains and train hands*.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness and durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel* for strength, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable wheel*, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That *TENSION* has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where *whole wheels and wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, *whole wheels as drivers* are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not the case* on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the *TENSION* or *STRAIN* they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces greater *contraction* of the tire, thereby increasing the *strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonies, which are respectfully submitted.

Lowell, March, 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, Jan 2, 1850.

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not *all* called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, Wilmington, Del.

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,
I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best quality* for special purposes, is respectfully invited.

COOPER & HEWITT,

17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,

New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron, Square " Flat " Scroll " Axles, Locomotive Tyres, Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO., 5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Coniocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

DAVIS'S ALHAMBRA HALL,
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY FISK & SPERRY,
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.

The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests.

BARNUM & CO.

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.

HENRY M. SMITH Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburgh

Washington Hotel,
BY JOHN GILMAN,
\$1 Per Day.
No. 206 Pratt street, (near the Depot,)
BALTIMORE.

GUY'S United States Hotel,
(Opposite Pratt street Railroad Depot,)
BALTIMORE.
JOHN GUY. WILLIAM GUY.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
THURSTON Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY FOR PATENTS. OFFICE AND LABORATORY, F. ST. OPPOSITE THE PATENT OFFICE, WASHINGTON, D. C.

Lithography.
JOHN P. HALL & CO.,
161 MAIN ST., BUFFALO, (COMMERCIAL ADVERTISER BLDG.)

ARE prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.) Coals for Steaming, etc.

ORDERS RECEIVED FOR AND FILLED
by J. COWLES, 27 WALL ST., N. Y.

J. & L. Tuckerman, IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER OF SHEFFIELD AND BIRMINGHAM GOODS.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,

STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.

State Assayer's office, 31 Somerset St.

BOSTON SEPT. 3, 1850.

STEEL AND FILES.

R. S. Stenton,
20 CLIFF STREET, NEW YORK,

AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.

FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.

A full Stock of Steel and Files at all times on hand.

6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
No. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works, Maryland Mining Company's Cumberland Coal 'C'DE'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.

A GENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.

July 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA,
PATENTEE OF THE

HERRON RAILWAY TRACK.

Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

Railway Cars & Omnibuses.

F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,

NO. 80 BROAD ST., NEW YORK,
IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilers, &c., by JOHN A. ROEBLING, Civil Engineer, TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—

IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhofer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Beat Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849.

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent.,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Junita Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS,
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory.

PARK WORKS, SHEFFIELD, Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes" L Blister Steel. Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS, 91 John street, New York.

Also by their Agents—Curtis & Hand, 47 Commerce street, Philadelphia. Alex'r Fullerton & Co., 119 Milk street, Boston. Stickney & Beatty, South Charles street, Baltimore. May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels, Scotch Pig Iron, Tin Plates and Banca Tin, Muntz Patent Metal Sheathing, Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED and for sale by the Bloomsburg Railroad Iron Co. LINDLEY FISHER, Treasurer. 75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by E. PRATT & BROTHER, Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 634 lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat. 200 " English Bar " " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by DAVID W. WETMORE, New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclope Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
24 Cliff St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property. Bolt, Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
5m9 62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by BOORMAN, JOHNSTON & CO., 119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Rolling and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by FISHER, MORGAN & CO., 75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal

Iron.

300 Tons "Salisbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,

No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO., 139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,

BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electerised Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter). B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being FINISHED BY HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints. They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

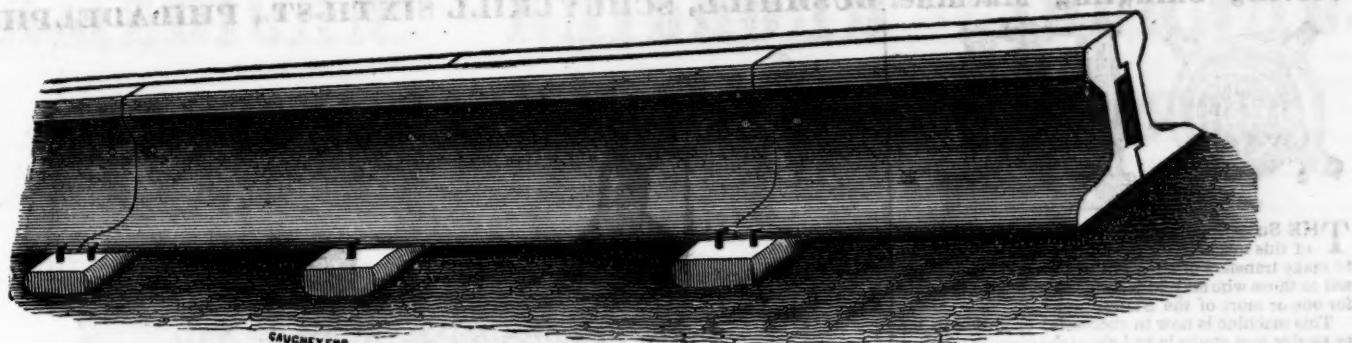
Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length, not exceeding 30 feet per rail. Apply at the office of the Company, No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.
September, 1850.

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.
September, 1850.

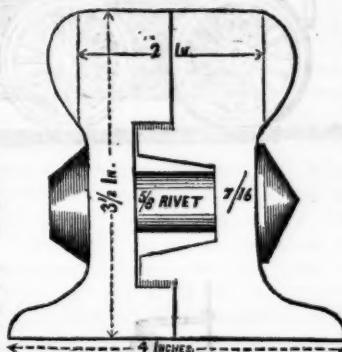
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a durable and continuous rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY.

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCAS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water St., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULLSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
69 Broad St.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.

January 10, 1851. 2m.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, ALLEGHENY COUNTY, MARYLAND, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany.

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna River; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR
TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

“POUGHKEEPSIE” brand, Dutchess Co., N. Y.
“GLENDON” brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hamfered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, at Erastus Corning & Co., Albany; Merritt, & Co., New York; E. Pratt & Br. & Co., Baltimore, Md.

Stickney & Beatty,
DEALERS IN IRON AND IRON
MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Railroad Iron.

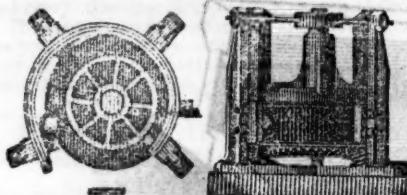
2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.

74 South St.
New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently it is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

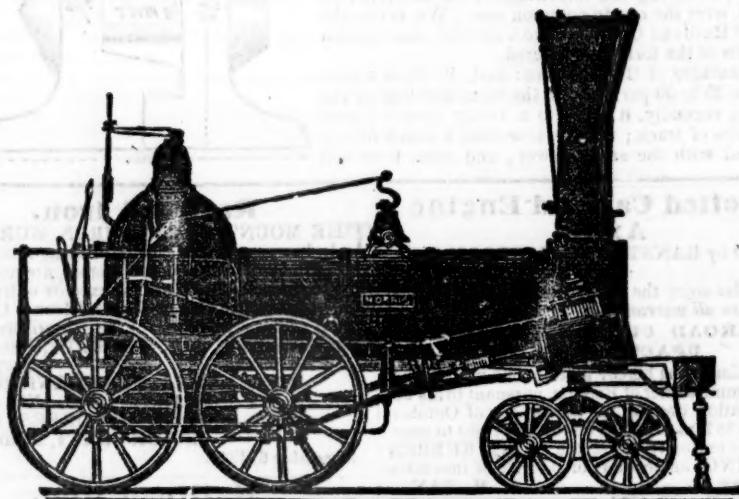
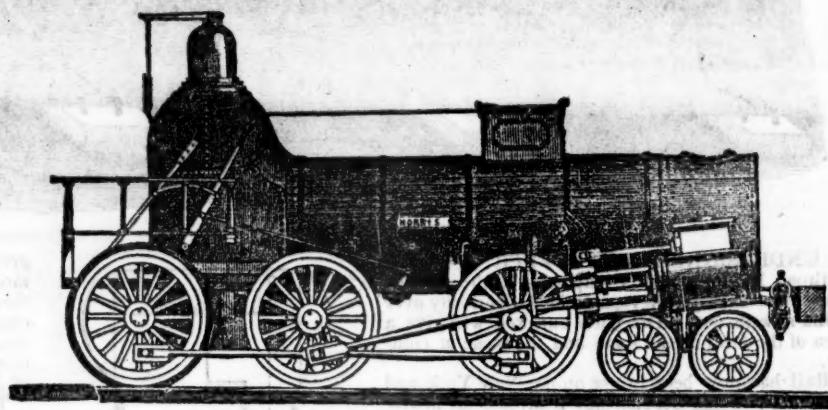
He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given. The Tires are made to fit on same without the necessity of turning out inside. Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Soe Manufacturers,

No. 55 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1843.

ly

UNION WORKS,

North street, opposite the Railroad Depot,

BALTIMORE.

Pool & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice. Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N.Y.